Building a Sustainable Future

Water: A Proposed Strategic Plan for Manitoba

A Discussion Paper

October 2001

Protecting & Managing our Future

Manitoba Conservation

October 2001

Dear Fellow Manitobans,

I am pleased to present Manitoba's proposed provincial water strategy. *Water: A Proposed Strategic Plan for Manitoba* is a discussion document through which we are seeking your input on the direction of water management in our province. It is a comprehensive document that will provide an umbrella for more detailed strategies developed subsequently.

The proposed strategic plan is based upon input received from Manitobans during various consultation processes, which began with Manitoba's Water Policies. It also seeks to address water issues that have been highlighted as a result of significant events in our province and across Canada. The proposed strategy builds upon what we are doing and attempts to guide us towards sustainability of our water resources. Since we cannot and will not pause in our efforts to address urgent water issues while the overall strategy is being developed, there are several water initiatives underway or soon to be underway, which will ultimately contribute to and be shaped by the provincial strategy. I encourage you to refer to page 18 of this document for a listing of these initiatives.

A steering committee comprised of key stakeholders will consult with all stakeholders and review input from the public. They will then make recommendations on the strategic plan and its implementation. A broad-based advisory group will also review the document and provide recommendations.

The steering committee welcomes invitations to speak to your group and provide them with information on the proposed provincial water strategy. I encourage you to provide comments, as an individual, or as part of an organization, community group, town, municipality, planning district, or conservation district. The committee will be pleased to accept your comments until February 28th, 2002.

Our provincial water strategy will be a long-term, integrated, planning, management, and regulatory framework which demonstrates our commitment to sustainable water management in Manitoba.

Thank you for taking the time to participate.

Sincerely,

Oscar Lathlin
Minister of Conservation

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Vision Statement

To manage our water resources so as to meet the present and future needs of Manitobans, while ensuring the integrity of our ecosystems.

The province, in consultation with stakeholders, will develop and implement a long-term integrated planning, management, and regulatory framework, which follows through on *Manitoba's Water Policies*, is based on watersheds, and reflects the interests and shared responsibility of all Manitobans.

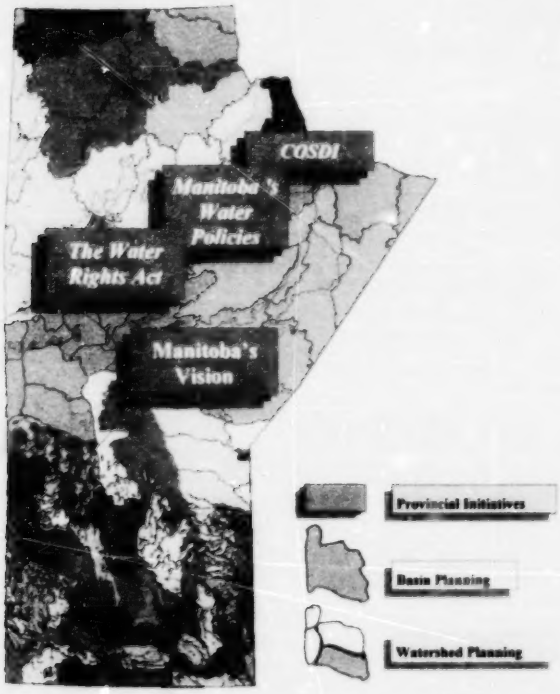
Introduction

The concept of sustainability – a sound balance of environmental management, economic development, and social well-being factors to ensure benefits for future generations – became the focus of an overall vision for Manitoba in the 1980's. It was recognized that Manitoba could not continue to develop economically unless the environment is protected, and conversely, continued economic development is needed to achieve important environmental initiatives. To guide Manitoba's vision, a Provincial Sustainable Development Strategy was initiated, with the public joining in the process. Water was the first resource to be addressed, resulting in *Manitoba's Water Policies* (1990) to guide sustainable water management in the province.

Manitoba's concept and vision of sustainable development has continued to grow and in 2000, Manitoba announced the acceptance and implementation of the recommendations in the *Report on the Consultation on Sustainable Development Implementation* (COSDI).

COSDI recommends that Manitoba make its environmental, land use, and resource allocation decisions in the context of large area plans, based on naturally definable areas, such as watersheds. COSDI advocates plans that encompass all aspects of sustainable development: land, water, other resources, economics, social, health, environment, and culture. It envisions a consensus based process, driven by local/regional, multi-stakeholder committees and supported by government staff and resources.

Manitoba Planning Context



These large area plans would become the guide for future-decision making and local planning. Large area (watershed) planning necessitates overarching policies and strategies at the provincial and basin levels, with which the watershed planning framework and resulting watershed plans need to be consistent. *Manitoba's Water Policies* and recent public consultations, respecting a number of emerging water related issues, must be included in any future planning processes.

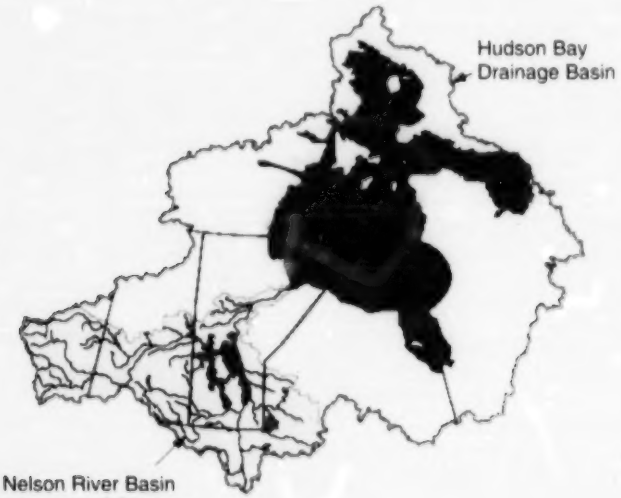
To blanket the province in broad based, integrated, watershed plans will be a multi-year undertaking, planned on an incremental basis. In the meantime, there are significant water-related issues to be addressed, many of which will be considered in this document. The challenge is to address those issues in a way that will form a foundation for broader, sustainable development watershed planning exercises.

Background

Manitoba...the land of 100,000 lakes

Manitoba has always been known for its seemingly boundless fresh water environment. An intricate network of lakes, rivers, and streams cover the landscape and seem to reach every place in the province.

Manitoba is situated within the Hudson Bay Drainage Basin. Seventy percent of the waters flowing across our province originate in other provinces and states. Within the Hudson Bay Drainage Basin, the largest basin is the Nelson River Basin, draining one-half of Manitoba's land. Within the Nelson River Basin there are ten sub-basins (Map 1), which in turn contain smaller drainage areas commonly known as watersheds. Waters within a watershed flow towards a common river basin.



The Nelson River Basin is the largest of 23 river basins within the Hudson Bay Drainage Basin

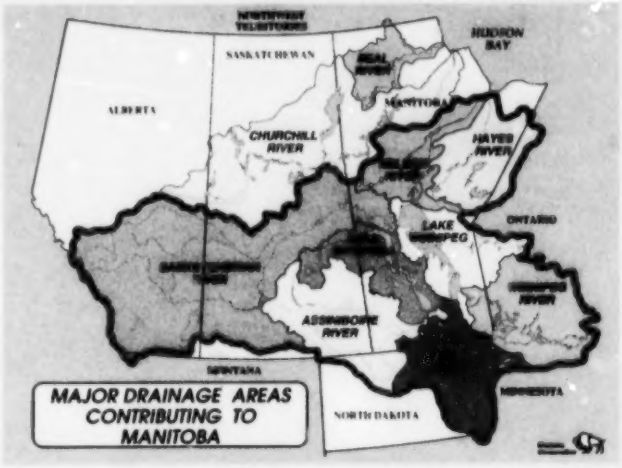
Resource management can be planned, integrated, and monitored at the watershed level, aiding both users and decision-makers. How we manage both land and surface water influences the quantity and quality of our ground water sources. Consequently, our water sources are influenced by almost everything we do within the watershed, either directly or indirectly.

At the watershed level, it is easily seen that water sustains life, from micro-organisms to the largest mammal, from fungus to trees. Water is essential in sustaining ecosystems. Manitoba waters etch the landscape, support life, and help to shape our society. Water will always be essential to our present existence and to our future.

The significance of water to Manitoba also lies in its power to cause hardship and devastation. Natural and extreme fluctuations in the quantity of the resource, season to season and year to year, can result in severe droughts or massive flooding, localized or widespread. Water not only has the power to sustain, but also to destroy.

The significance of water is exemplified by the fact that three-quarters of Manitobans live in areas of the province known for their history of extensive flooding. Conversely, Manitoba is also part of the prairie region that experiences extremes in droughts, causing hardships for people and the economy. Our water laws are in response to the need for providing stability when coping with water shortages.

Manitoba's water resources have always provided enormous benefit and opportunity for Manitobans. Manitoba's fresh water is an important economic advantage, providing us with the means to generate environmentally friendly, renewable, hydroelectric power. The development of hydroelectric power is a key element of a long-term economic strategy for Manitoba. Hydroelectricity is a reliably priced, clean energy option, which attracts energy intensive industries to our province. The increased use of hydroelectricity can significantly reduce green house gas emissions, thereby aiding in meeting local and global climate change obligations. These factors make Manitoba Hydro a major player in provincial and international energy sectors.



Map 1 - Major Drainage Basins flowing through Manitoba
*Within the Hudson Bay Drainage Basin, the Nelson River Basin is defined in bold line

Manitoba also benefits from its water supplies in terms of both economics derived from the agricultural sector and the social aspects of farming life. Livestock and crop production both require dependable sources of water and result in jobs, direct and indirect, while being a major contributor to the provincial economy, directly and in terms of associated industries. The commercial fishing industry also generates economic and social benefits to individuals and their communities, as well as to the province. Manitoba's water resources sustain not only a commercial fishing industry, but also a way of life. With 100,000 lakes, linked by numerous rivers, tourism flourishes in Manitoba. Recreation and tourism rely on our water resources for swimming, fishing, boating, relaxing on beaches and along waterways, and viewing wildlife in its habitat. Water also provides us with many aesthetically pleasing settings.

The development of flood control, water power impoundment and diversion works, have resulted in changes to the natural system. These changes have generated environmental, economic, and social impacts. Over time, many of the needs and uses of water have changed and will continue to change, as will the pressures placed upon the resource. The pressures at the beginning of the 21st century are: an increasing population, expansive development, agricultural and other land use changes, increased industrial demands, technological changes, increased pollution, and more fluctuations in our climate. Pressures will continually increase and change, therefore, we must take a proactive, adaptable approach to water management, in accordance with Manitoba's vision.

Recent public input and a number of significant events have highlighted the need for much greater attention to water management. The 1997 flood revealed the vulnerability of the Red River Valley and the city of Winnipeg to major flood damages. The wetter than normal 1990's exposed some shortcomings in Manitoba's agricultural drainage network. Expansion of the food processing industry, coupled with the increasing need for water supplies, highlighted the need for refining methods for determining, within the context of ecosystem integrity, sustainable water withdrawals, water retention, and treated effluent discharges. Rapid expansion in hog production has raised public concerns regarding the potential for aquifer and surface water pollution. The events in Walkerton, Ontario alerted us to the importance of monitoring and maintaining water quality and protecting drinking water sources. These ever-changing factors have challenged our ability to maintain and improve water quality and quantity for Manitobans and within Manitoba ecosystems.

The resolution of these realities and emerging issues lies within cooperative water management efforts, the level of available resources, and strategies through which to develop and implement effective solutions. All of these mechanisms must reflect the principles and guidelines of sustainable development and be supported through legislation, providing an overall regulatory and management framework.

In light of such emerging issues and challenges, Manitoba began a series of public consultations. In 1998 and 1999, many public forums were held throughout Manitoba to discuss land drainage, water usage and allocation, and Manitoba's water legislation. Reviews on drinking water and consultations on livestock stewardship, both of which included water quality and quantity issues, were conducted in 2000.

The document *Manitoba's Water Policies* (policy summary on page 21) was reviewed within the context of developing this document, to show what has been accomplished and to ensure that the objectives and intent of all the policies are met. This information, coupled with the ideas of Manitobans assembled from the various public reviews, forms the groundwork to develop a comprehensive, strategic plan for managing water resources in Manitoba.

Water: A Strategic Plan for Manitoba will be comprised of four components, which will be carried out concurrently. It will include:

I a provincial water strategy that encompasses **Issue-Specific Provincial Strategies.**

II the development of **Watershed Management Planning** initiatives and guidelines,

III a legislative review resulting in a **Legislative Framework** which is more comprehensive, and

IV a plan for the **Financial Underpinnings** of the Strategic Plan.

In developing this Strategic Plan it is important that local needs, initiatives, Manitoba's vision, and international influences be kept in mind.

Watershed planning processes, developed through input from users and user groups, will show specific issues and prioritize water needs and allocations on a very local level (the watershed) and in relation to other management plans, embodying the framework of COSDI. Watershed plans will be brought together on a basin level where priorities for the entire basin will be established. Basin planning will be done within the context of the vision, standards, and guidelines developed for Manitoba as a whole. Partnerships and agreements, financial and otherwise, will be needed to ensure the progress of these plans. It is also important to ensure that environmental stewardship, our quality of life, and the viability of our economy are brought together to create a sense of balance. The processes for maintaining this balance will be firmly established in legislation to ensure the future of our water resources, an important part of Manitoba's environment and economy.

In order to implement the strategic plan, the public will continue to be consulted on a variety of water management issues. The information gathered from Manitobans will be used to determine and develop the future course of water management in Manitoba.

I Issue-Specific Provincial Strategies

Manitoba's water resources are important because of the influence upon, and vital role they play in, the prosperity of our province. Water influences, and is influenced by, land use practices and priorities within our society. Water contributes, directly and indirectly, to local and provincial economies while supporting ecosystem functions. Extremes in the quantity of Manitoba's water resources can negatively impact us should we not be well prepared to adapt quickly to the natural range of streamflows and lake levels.

Manitoba Conservation is responsible for administering the legislation under which property in, and all rights to, any water resource is vested in the province which has certain responsibilities regarding the management of Manitoba's water resources. *The Water Power Act* and *The Water Rights Act* establish provincial ownership of the resources, while *The Water Resources Administration Act* sets out responsibility for the provincial waterway system, designated flood areas, and all water control works. *The Environment Act* provides licensing authority, a framework for assessment, as well as comprehensive tools to protect, maintain, and restore the quality of all environmental components, including water.

It is important to note that Manitoba Conservation is not the only agency involved in water management; many other government departments as well as local groups play an active role. All groups must work towards increasing partnerships and improving co-operative and complementary water management efforts. Manitoba Intergovernmental Affairs, which administers the *Conservation Districts Act*, Manitoba Agriculture and Food, Manitoba Transportation and Government Services, municipal governments, Prairie Farm Rehabilitation Administration (PFRA), Environment Canada, Department of Fisheries and Oceans (DFO), conservation districts, and many community-based organizations all have complementary, vital roles in water management.

Water: A Strategic Plan outlines six issue-specific provincial strategies relating to the seven policy areas within *Manitoba's Water Policies*. The seventh policy area, Education, is contained within these six policy strategies. Many of the proposals in the issue-specific provincial strategies have already been initiated. Manitoba Conservation and appropriate agencies will develop, in conjunction with public feedback, other proposals to address a number of the issues discussed in the issue-specific provincial strategies. As part of the broader context, these strategies must also be able to meet emerging challenges and developments in other jurisdictions within the Hudson Bay Drainage Basin.

The six issue-specific provincial strategies are detailed on the following pages.

Water Quality

The objective of Manitoba's water quality policies is to protect and enhance our aquatic ecosystems by ensuring that surface water and ground water quality is adequate for all designated uses and ecosystem needs.

These policies protect our water based on the Manitoba Water Quality Standards, Objectives, and Guidelines, which consist of adopted, scientifically based, allowable levels. Maintaining quality of the resource shall be supported through programs and projects that are based on sustainability principles. Policies also serve to address pollution through co-operative pollution control programs.

Water Quality Issues

- Source protection programs for ground water and surface water used for drinking purposes require strengthening.
- Nutrient levels in many of our water bodies are too high.
- The existing Water Quality Standards, Objectives, and Guidelines do not reflect the current environmental protection goals of Manitobans and current scientific understanding.
- Water contamination and usage occurs from various industrial activities, including mining, manufacturing, forestry, and hydroelectric power production.
- Unsealed and abandoned or improperly constructed wells pose a threat to water quality.
- The potential to contaminate surface and ground water, through surface runoff from lands receiving livestock manure, needs to be fully understood.
- Non-native, aquatic, nuisance species are a threat to Manitoba's ecosystems.

Water Quality Strategy

- Complete and implement the proposed Water Quality Standards, Objectives, and Guidelines.
- Develop and implement Manitoba's Nutrient Management Strategy.
- Increase water quality monitoring and enforcement.
- Develop additional protection programs for surface and ground water sources.
- Manage water quality through integrated planning for aquifers, basins, and watersheds.
- Enhance drinking water standards and analysis through the implementation of recommendations from the Drinking Water Advisory Committee Report (October 2000).
- Address well construction and responsibility for abandoned wells through legislative changes.
- Develop additional programs to ensure minimal impact of industrial activities, both past and present, such as remediation of contaminated sites, abandoned mines, etc.
- Develop comprehensive, co-ordinated programs, backed by legislation, to protect Manitoba's ecosystems from non-native, invasive, nuisance species.

Conservation

The objective of Manitoba's water conservation policies is to conserve and manage the lakes, rivers, and wetlands of Manitoba so as to protect the ability of the environment to sustain life and provide environmental, economic, and aesthetic benefits to existing and future generations.

Our conservation policies are implemented through regulations, incentives, education, and watershed based, integrated management of resources. Watershed based, integrated resource management would, in specific relation to water, retain water and moderate flows for water supply, ground water recharge, and wetland habitat, while reducing erosion and deposition.

Conservation Issues

- Water planning initiatives are required to protect the quality and quantity of water sources and to protect the ecosystem and aesthetic values.
- The role of wetlands, which stabilize and maintain ecosystem functions, needs to be integrated into the water planning process.
- A wetland classification system along with effective conservation methods is not available.
- A classification system for fish habitat and a co-ordinated process for the protection and enhancement of fish habitat in the design of drainage systems are not currently available.

Conservation Strategy

- Develop integrated resource planning to allow for habitat and resource conservation measures to be incorporated early in the planning process.
- Research and develop better scientific tools to ensure ecological integrity is maintained.
- Develop a system of wetland classification and implement wetland conservation strategies as part of watershed planning.
- Continue to develop appropriate education and taxation incentives to encourage conservation objectives.
- Draft new water legislation that includes the role of water in ensuring a properly functioning ecosystem.
- Develop workable, practical means to harmonize with the *Fisheries Act* of Canada Section 35(1), including a fisheries habitat classification system.
- Develop a watershed planning framework and guidelines that have conservation as a priority.
- Encourage the maintenance and establishment of on-farm water retention, while ensuring that downstream users and impacts on fish habitat are taken into consideration.

See page 18 for the specific initiatives currently underway.

The objective of Manitoba's water use and allocation policies is to ensure the long-term sustainability of the province's surface water and ground water for the benefit of all Manitobans.

Use & Allocation

These policies address provincial ownership of water and provincial responsibility to manage this resource. Policies deal with water legislation, which addresses the provincial ownership of the resource and provides guidance as to how that resource shall be managed, while striving for economic well-being and sustainability of the resource. Priorities should be established through a basin and watershed planning process. Prohibition of inter basin transfers is clearly stated, while specifying that any intra basin transfers shall consider the impacts on both the donor and receiving sub-basins.

Use & Allocation Issues

Current demands on Manitoba's water resources are challenging the effectiveness of the current *Water Rights Act* in regards to:

- allocating water within the framework of *Manitoba's Water Policies*,
- prioritizing amongst users,
- incorporating ecosystem needs,
- integrating quality and quantity,
- assessing intra basin transfers, and
- addressing the impacts of other activities in the watershed, both within Manitoba and in other jurisdictions.

Use & Allocation Strategy

- Draft new water legislation, consistent with *Manitoba's Water Policies*, to ensure effective and appropriate allocations are made amongst the various users and uses.
- Review water rights licensing in order to assure the most effective and efficient possible process.
- Incorporate all uses and users appropriately into aquifer, basin, and watershed based management.
- Integrate water quantity and quality in use and allocation decisions.
- Include in legislation, requirements to sustain life within the ecosystem as a priority allocation.
- Negotiate agreements with appropriate agencies to co-operatively manage local water resources.
- Conduct water use monitoring.

See page 19 for the specific initiatives currently under

Water Supply

The objective of Manitoba's water supply policies is to develop and manage the province's water resources to ensure that water is available to meet priority needs and to support sustainable economic development and environmental quality.

These policies focus on managing water demands while considering the impacts of development on other uses and the environment. Issues addressed by this policy area include who should pay the costs of development of water supply infrastructure and the protection of pristine and potable water supplies.

Water Supply Issues

- It is becoming increasingly necessary to find methods to achieve sustainability by balancing increasing demands with existing supplies.
- A complete understanding of the long term impacts of development on the water supply is necessary.
- Methods to finance and apportion the costs of development and management do not currently exist.
- A complete understanding of the effects of climate change on our water supply is not available.

Water Supply Strategy

- Draft new water legislation to better reflect *Manitoba's Water Policies* and incorporate emerging issues.
- Incorporate water supply issues into the aquifer, basin, and watershed based management framework.
- Consider fair licensing fees and user charges.
- Develop a plan for water storage options, including maintenance of existing facilities, as part of broad based water planning in Manitoba.
- Co-ordinate with other jurisdictions to ensure the sustainability of our water supply.
- Determine possible effects of climate change on water supplies and study options to deal with possible changes.

Flooding

The objective of Manitoba's flooding policies is to alleviate human suffering and minimize the economic costs of damages caused by flooding.

These policies primarily seek to reduce damages and human suffering caused by flooding, through the control of development in flood prone areas and the exploration of economically viable measures to reduce flood damages.

Flooding Issues

- The 1997 flood has shown the vulnerability of Winnipeg and the Red River Valley to a larger flood. Practical means to decrease flood vulnerability need to be developed and implemented.
- Further development in unprotected, flood prone areas increases flood damages in Manitoba.
- Localized flooding, contributed to by land use and drainage changes in the watershed, continues to occur.
- River and tributary flooding in rural Manitoba continues to occur, causing economic hardships.
- Flooding of farmland and infrastructure in the Souris River Valley, Assiniboine River Valley, and Red River Valley continues to occur.
- Flash flooding and erosion along the escarpment occurs as a result of heavy rains.

Flooding Strategy

- Increase the level of flood protection in the Red River Valley.
- Determine and implement the most effective and viable means of increasing flood protection for the city of Winnipeg.
- Review proposed projects in the Red River Basin as to whether or not they could have an effect on flood damages.
- Develop and implement land use planning strategies to ensure development does not occur in areas of high flood risk.
- Prepare watershed and basin plans that will address flooding issues.
- Implement community protection measures where they are economically feasible.
- Promote emergency preparedness and flood damage reduction by continuing to improve and expand real-time hydrological monitoring and forecasting, with timely provision of such information to the municipalities and other users.

See page 19 for the specific initiatives currently underway.

Drainage

The objective of Manitoba's water drainage policies is to enhance the economic viability of Manitoba's agricultural community through the provision of comprehensively planned drainage infrastructure.

Drainage is defined as that infrastructure which is designed to remove excess rainfall during the growing season, based on the productive capability of the soil and on technical, economic, and environmental factors. The policies present maintenance of drains as a higher priority than reconstruction, while reconstruction is a higher priority than new construction. Drainage shall be undertaken on a watershed basis, endeavoring to protect wetland areas, fish habitat, and downstream water quality. Drainage will also consider issues related to water retention, control, and timing of runoff.

Drainage Issues

- Land drainage is not well coordinated amongst landowners, municipalities, conservation districts, and the provincial government.
- Drainage needs vary across the province. Drainage enforcement is generally the major issue for the 'pothole' region in the Assiniboine basin, while reconstruction and maintenance of drainage infrastructure tend to be the dominant issues in the Red River, Lake Winnipeg, and Lake Manitoba Basins.
- The drainage system has deteriorated over the years and resources are declining to the point where many municipalities are requesting increased provincial assistance.
- An assessment and understanding of the relationship between drainage, fish habitat, and downstream water quality needs to be taken into consideration during the planning, licensing, construction, and maintenance of drainage works.

Drainage Strategy

- Develop and implement a clear, co-ordinated approach amongst local organizations, municipal governments, and provincial government departments.
- Develop appropriate standards for drainage that include the protection of fish and wildlife habitat and downstream water quality.
- Recognize regional differences in drainage issues and requirements.
- Develop drainage plans locally, within the context of the watershed, which consider watershed rehabilitation, potential downstream impacts, wetland conservation, and fish habitat.
- Incorporate drainage as part of the watershed planning approach in the new water legislation.
- Seek methods to streamline the approval process and improve enforcement.

See page 20 for the specific initiatives currently underway.

II Watershed Management Planning

The framework for water management planning is intended to provide general guidance by outlining the components and steps used in water management planning. While the major components of all plans must be similar, detailed processes for preparation of plans will vary.

Planning at both the basin and watershed levels has occurred, to various degrees, in many areas of the province for more than a decade. The components of the framework reflect successes from past experience and new requirements based on our increased understanding of the complexity of the environment and the challenges of the future.

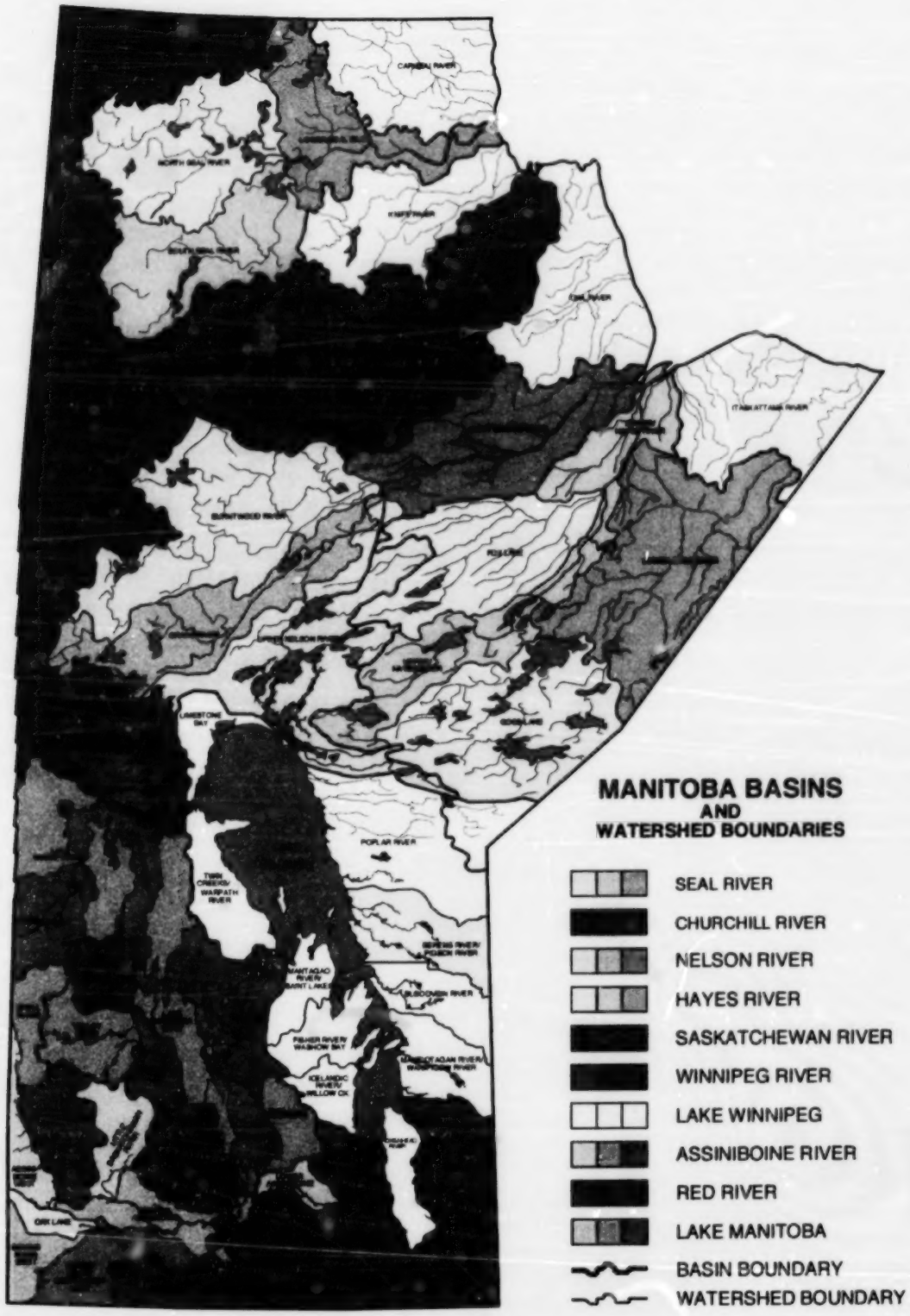
Planning and managing resources and activities on the basis of watersheds and basins is supported by Manitobans, and voiced through public consultation processes. The government, through its commitment to sustainable resource and environmental management, has made it clear that responsibility for water management is shared by all Manitobans. At the same time, the province will provide a lead role to guide water management. Municipal governments, industry, and members of the general public will need to play a role in water management planning activities. The government will support and facilitate public involvement and ensure that the level of involvement will be appropriate to the type of planning activity conducted.

Watershed Management Issues

- Water is not being managed on a watershed basis, leading to inefficiencies and environmental, economic, and social damages.
- Municipalities require a process by which they can co-ordinate their efforts on a watershed basis and work together to develop watershed based plans.
- Manitoba requires a process through which co-operative, watershed based planning can occur with other jurisdictions.
- Linkages between provincial, basin, watershed, conservation district, aquifer, planning district, and municipal plans need to be developed.

Watershed Management Strategy

- Develop a basin and watershed planning framework which shall:
  - provide all Manitobans with an opportunity to participate,
  - be referenced in the new water legislation,
  - provide for the consideration of cumulative impacts,
  - provide for the integration of quality and quantity,
  - ensure resource conservation,
  - address watershed restoration, and
  - provide a mechanism to integrate the involvement of all jurisdictions and all resource sectors.
- Develop linkages between provincial, basin, watershed, conservation district, aquifer, planning district, and municipal plans.
- Establish a committee which shall co-ordinate, implement, and guide planning on a watershed and basin basis.



Map 2 – Basin and Watershed Boundaries in Manitoba

III Legislative Framework

One of the key components in ***Water: A Strategic Plan for Manitoba*** is the review and modification of legislation applying to water within the province. Consideration will be given to developing comprehensive water legislation, which will incorporate most existing water legislation into one act. Exempted would be legislation dealing with environmental quality, such as *The Environment Act* and *The Public Health Act*. The comprehensive legislation will be drafted by Manitoba Conservation based on the information gathered from recent public reviews and will be subject to further, more extensive, public consultation.

The Water Rights Act, The Water Resources Administration Act, The Ground Water and Water Well Act, The Diking Authority Act, The Water Commission Act, The Water Supply Commission Act and *The Water Resources Conservation and Protection and Consequential Amendments Act* will be reviewed for inclusion in the consolidation. Further review will determine when other legislation pertaining to water should also be consolidated into the new act. The legislative changes will work with the issue specific provincial strategies and the watershed planning components to aid, regulate, and strengthen water management in Manitoba.

Legislative Issues

Water Rights Act

- A contradiction exists between providing security to existing users and ensuring water is available for priority uses in the future.
- Watershed management and aquifer management plans are not recognized in legislation.
- Collection and analysis of water use data can be improved.
- A backlog of licensing applications exists.
- The provision for and determination of ecosystem needs is not recognized in legislation.
- Water is currently used for effluent dilution, however, there is no provision under the act to allocate it for that purpose.
- Some provisions within provincial legislation and the federal *Fisheries Act* are inconsistent.
- The vital role of watershed management organizations (for example, conservation districts) and aquifer management boards is neither recognized nor specified in current water legislation.

Legislative Strategy

- Develop a legislative framework that provides security to existing users while ensuring that water is available for priority uses in the future.
- Recognize basin, watershed, and aquifer plans as part of the new water legislation.
- Address the backlog of licence applications.
- Address ecosystem needs in legislation and continually refine them.
- Introduce new legislation in regards to dam safety.
- Integrate water allocation with the requirements of the federal *Fisheries Act*.
- Define the vital role of watershed management organizations (for example, conservation districts) and aquifer management boards in legislation.
- Develop the means to integrate regulatory approvals.

IV Financial Underpinnings

In order to implement this Strategic Plan, the financing of water management must also be considered and ensured. The Land Drainage Review, the Water Use and Allocation Review, the Livestock Review, the Drinking Water Review, the International Joint Commission (IJC), and The Water Commission Review of the 1997 flood have all brought to light the serious shortage of resources dedicated to water management. This includes maintenance of provincial and other works, a need for water supply and flood control infrastructure development, monitoring all aspects of water usage, quality and flows, data collection and analysis, and enforcement of the new water legislation.

Financial Issues

There is a shortage of resources dedicated to water management in regards to:

- maintenance of provincial works,
- data collection and analysis,
- enforcement, and
- resource protection programs.

In most situations these shortcomings are the result of under-funding by all involved, the federal government, the province, municipalities, and individuals. However, there is willingness by all parties to address this situation. Therefore, a financial strategy will involve all stakeholders in a co-operative dialogue working towards new funding arrangements and partnerships.

Various committees with representation from the federal government, the province, Association of Manitoba Municipalities (AMM), Keystone Agricultural Producers (KAP), Aboriginal communities, and other groups as required will be formed. Their task will be to seek consensus on new and viable funding arrangements.

Financial Strategy

- Develop a water financing strategy in co-operation with appropriate stakeholders.
- Consider water use, drainage, effluent discharge, and waterpower in this strategy.
- Examine funding options for maintaining and reconstructing the Provincial Waterway System and for watershed restoration projects.

Initiatives Currently Underway

WATER QUALITY

Manitoba's 1988 Water Quality Standards, Objectives, and Guidelines (MWQSOG) are currently being revised and, as proposed, will be the most comprehensive in Canada. The proposed amendments include new standards and are aimed at proactively protecting, maintaining, and rehabilitating water quality. MWQSOG will provide enhanced protection for surface water, and for the first time in Manitoba, propose standards, objectives, and guidelines for the protection of ground water, lake and river bottom sediments, and include measures aimed at protecting fish and the structure and function of other aquatic biological communities. An extensive public review process is underway.

A comprehensive Nutrient Management Strategy is being developed for Manitoba to address excess plant nutrients, such as phosphorus and nitrogen, in surface water sources. Much of the baseline information has been gathered and input received from Manitobans.

To further address such issues and ensure protection of ground water sources, the province launched The Manitoba Ground Water Quality Initiative. The initiative includes assembling and interpreting existing data, while identifying and sampling approximately 1,000 sentinel wells throughout the agricultural regions of Manitoba on an on-going basis.

Public concern regarding possible degradation or contamination of local water supplies due to non-sustainable expansion of agricultural industries resulted in the province developing livestock manure spreading regulations and guidelines. Consultations with Manitobans were recently conducted on the issue of sustainable livestock development in Manitoba. The panel considered aquifer location, sensitivity to ground water pollution within regional and site-specific contexts, preventative measures, as well as sampling and monitoring regimes. The Sustainable Livestock Development Report was released with many recommendations on how this important industry can continue to develop and expand in Manitoba, in the context of environmental stewardship and social factors.

Another initiative, Manitoba's Drinking Water Advisory Committee, reviewed auditing, reporting, and follow up procedures for bacterial testing of all water systems in the province, seeking to improve the process and safeguard all Manitobans. The Drinking Water Report, released in 2000, recommends actions needed to ensure the provision of high quality drinking water to all Manitobans. Implementation of the recommendations is underway.

CONSERVATION

As a pilot project, Manitoba Conservation, Prairie Farm Rehabilitation Administration (PFRA), Manitoba Intergovernmental Affairs, and Ducks Unlimited have initiated a reverse taxation incentive program to maintain wetlands. The province is working towards a fair taxation system that provides incentives for wetland retention and disincentives for wetland loss.

Under the *Conservation Agreements Act* (June 1997), landowners and conservation agencies can enter into agreements for the protection, enhancement, and/or maintenance of natural ecosystems, wildlife or fisheries habitat, and/or plant or animal species. These agreements allow for conservation objectives to be met, while allowing the landowner to retain ownership and use of the land.

Water, habitat, and ecosystems can also be

sustained through the development and use of standards or guidelines. The guidelines are used to aid industry, landowners, conservation districts, and local organizations in maintaining and restoring vegetation in bordering or buffer areas, as well as shoreline and aquatic habitat. The focus in southern Manitoba has been mostly along streams that are subject to channelization and the effects of upstream and local activities. Department of Fisheries and Oceans (DFO) and Manitoba Conservation are currently developing drainage guidelines, which will clarify landowner, municipal, and provincial responsibility with respect to agricultural drainage.

The province has worked towards having Manitoba rivers designated under the Canadian Heritage River System. The Bloodvein River and Seal River have been included in the program and have management plans in place to guide their futures. The Hayes River is nominated under the program and a management plan for it is currently being prepared.

USE AND ALLOCATION

With local input, aquifer plans have been completed for the Winkler Aquifer (March 1997) and the Oak Lake Aquifer (March 2000). Implementation of the Winkler Aquifer Management Plan has been successfully progressing with the guidance of the locally established board. A similar board for the Oak Lake Aquifer Management Plan was formed in June 2000. The board has begun implementation actions for the aquifer. Aquifer plans endeavor to protect the quality of the source, as well as the quantity of the supply.

In 2000, *The Water Resources Conservation and Protection Act* was proclaimed. The intent of the act is to ensure that any removal of water from Manitoba's water basins is not carried out in quantities that, individually or cumulatively, could have significant adverse effects on Manitoba's water resources or impact its ecology.

In January 2001, the premier of Manitoba signed an agreement with the governor of Missouri, in which both parties agree to work co-operatively in opposition to transfers of water from the Missouri River system to the Hudson Bay Drainage Basin.

Manitoba Conservation has been developing Instream Flow Needs (IFN) for provincial watercourses to ensure that ecological integrity is maintained. The purpose of IFN is to ensure that a portion of the water supply is allocated to conservation and that systems are managed within normal flow variability. Models are under development for representative river and stream classifications, with calculations utilized to adjust quantities or water removed for domestic, industrial, or irrigation purposes.

FLOODING

Throughout the flood prone region, community dikes are underway or completed at fifteen locations. As well, approximately 1,500 individual home and business flood-proofing projects have been completed. Other programs have also been initiated, including a $3 million financial anomalies program for properties where the cost of flood-proofing is greater than the property value and a $2.2 million physical anomalies program for properties where physical restrictions make diking impossible.

Amendments were made to *The Water Resources Administration Act* to reduce future flood damage and protection costs by re-establishing designated flood area boundaries and increasing protection requirements for barns, sewage lagoons, and manure storage facilities. Legislation requiring that development in flood prone regions be protected to the 1997 level plus two feet was enacted. The law was designed to protect future owners from acquiring properties that have not been properly safeguarded from flooding.

Improvements regarding flood preparedness have been also initiated, including improved flood forecasting and a comprehensive flood activity manual for Winnipeg's sewer and flood control systems. Improvements to the Red River Floodway have been undertaken, with $40 million earmarked for its expansion. Repairs to the Assiniboine River dikes are nearing completion and a further $25 million has been earmarked for other flood protection measures across rural Manitoba.

DRAINAGE

Recent amendments and enforcement of *The Water Rights Act* with respect to drainage have had a significant effect on decreasing the amount of unauthorized drainage and have clarified provincial jurisdiction over drainage. Manitoba Conservation has also been working with Manitoba Agriculture and Food, Manitoba Intergovernmental Affairs, and landowners to develop and enforce a coordinated approach to drainage across the province. The province is committed to working towards resolving drainage issues, and as such, has re-established Regional Water Managers and deployed Water Resource Officers to the regions so that drainage issues can be dealt with on the landscape.

Significant progress has been made in sorting out provincial and municipal responsibility over the past four years, in terms of drainage licensing and enforcement. The Association of Manitoba Municipalities (AMM) and the province have accepted a shared responsibility for drainage and are working towards developing complementary solutions.

A pilot project is underway in which the Whitemud Conservation District is undertaking a greater role in the licensing and enforcement of drainage works.

The Land Drainage Review recommends an integrated systems approach to land drainage. Since the release of the report in 1998, the number of conservation districts has increased significantly and a number of watershed management associations have been organized.

Manitoba Water Policies Summary

1. WATER QUALITY
To protect and enhance our aquatic ecosystems by ensuring that surface water and ground water quality is adequate for all designated uses and ecosystem needs.

Policy 1.1 - The "Manitoba Surface Water Quality Objectives" shall be adopted and implemented to protect water uses for Manitobans.
Policy 1.2 - Water quality shall be enhanced through the management of water resources.
Policy 1.3 - Water quality enhancement programs shall be designed to restore environmental quality, as well as deliver economic, cultural, and heritage benefits to Manitobans.
Policy 1.4 - The quality of wastewater discharges shall be improved and non-point sources of pollution decreased to achieve water quality objectives.
Policy 1.5 - Pollution control programs shall be designed in consultation with affected user groups and, where possible, implemented in such a manner as to cause minimum disruption to established land and water uses.

2. CONSERVATION
To conserve and manage the lakes, rivers, and wetlands of Manitoba so as to protect the ability of the environment to sustain life and provide environmental, economic, and aesthetic benefits to existing and future generations.

Policy 2.1 - River, lake, and shoreland habitat and the general environmental, subsistence, and economic values of rivers, lakes, and wetlands shall, where possible, be conserved.
Policy 2.2 - Soil conservation, wetland retention, and the application of appropriate land use practices shall be promoted primarily by the provision of incentives, but with regulation where required, not only as essential elements of water conservation and protection, but also as key measures to reduce siltation impacts, downstream flooding, and non-point source pollution.
Policy 2.3 - Those waterways whose cultural, natural, and/or recreational values are of provincial or national significance shall be given special consideration.
Policy 2.4 - Water retention, and control and timing of runoff, shall be promoted as part of watershed management.

3. USE & ALLOCATION
To ensure the long-term sustainability of the province's surface water and ground water for the benefit of all Manitobans.

Policy 3.1 - Economic well-being and sustainability shall be the goal in the allocation and utilization of Manitoba's water resources for consumptive and instream uses.
Policy 3.2 - Water management priorities shall be determined through a basin planning process that takes into account the protection of potable water supplies, environmental integrity, existing commitments, and economic requirements.
Policy 3.3 - Ground water development and utilization shall be managed so that the long-term sustainability of aquifers is achieved and existing uses are not negatively impacted.
Policy 3.4 - Surface water shall be managed to ensure sustainability of supplies.
Policy 3.5 - Transfer of untreated water across the Continental Divide (to or from the Hudson Bay drainage area) shall be opposed. Transfers within the Hudson Bay drainage area shall be minimized and only considered after a complete assessment of the environmental, social, and economic impacts on the donor and receiving basins.

4. WATER SUPPLY
To develop and manage the province's water resources to ensure that water is available to meet priority needs and to support sustainable economic development and environmental quality.

Policy 4.1 - Demand management programs shall be implemented to conserve water and reduce the requirements for new water supply infrastructure.
Policy 4.2 - Irrigation, industrial, and other development proposals involving direct or indirect water use shall consider impacts on existing and potential water uses as well as impacts on the environment.
Policy 4.3 - The cost of developing, operating, and maintaining the water resource infrastructure shall be apportioned among the beneficiaries in accordance with their share of the benefits.
Policy 4.4 - Pristine and potable water sources shall be afforded special protection.

5. FLOODING
To alleviate human suffering and minimize the economic costs of damages caused by flooding.

Policy 5.1 - Development on land subject to flooding or other water related hazards shall occur only under planning guidelines which prevent human suffering and property damage, limit public costs and liabilities, and address environmental impacts.
Policy 5.2 - Economically viable measures to alleviate personal and property damage to existing development in flood prone areas shall be fostered.
Policy 5.3 - The negative impacts of changes to water level and flow regimes caused by hydro-electric development projects shall be mitigated to the extent possible.

6. DRAINAGE
To enhance the economic viability of Manitoba's agricultural community through the provision of a comprehensively planned drainage infrastructure.

Policy 6.1 - Drainage works shall be designed to remove excess rainfall from cropland during the growing season.
Policy 6.2 - The standard of drainage shall be based on the production capability of the soil and on technical, economic, and environmental criteria, recognizing watershed, community, and farm impacts.
Policy 6.3 - Maintenance of existing drainage systems shall be of higher priority than reconstruction.
Policy 6.4 - Reconstruction of drainage systems to improve productivity and to reduce erosion and deposition shall be given a higher priority than expansion into new agricultural lands.
Policy 6.5 - Drainage projects shall be planned and executed so that projects in one area do not adversely affect another area.
Policy 6.6 - The protection of wetlands shall be a consideration in planning and developing drainage projects.
Policy 6.7 - Water retention, and control and timing of runoff, shall be promoted as part of watershed management.

7. EDUCATION
To enhance the awareness and knowledge of Manitoba's water resources.

Policy 7.1 - Schools: Students of all ages shall be provided with information on the significance of Manitoba's water resources.
Policy 7.2 - General Public: Education on water matters shall be achieved in part through the sharing of information, demonstration projects, and the involvement of the general public.
Policy 7.3 - Forum for Scientific and Technical Input: A forum shall be developed to obtain input from the scientific, technical, and professional communities on water management issues.
Policy 7.4 - Community Leaders and Elected Representatives: Community leaders and elected representatives shall be provided with the information they need to make sound water management decisions.